



## Dennis G. Raveling Endowed Professorship

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Wildlife, Fish and Conservation Biology

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### ENDOWMENT PURPOSE

The Dennis G. Raveling Endowed Waterfowl Professorship was established through financial gifts and volunteer service contributed by individuals, foundations, corporations, and four key partners: the UC Davis College of Agricultural and Environmental Sciences, Friends of California Waterfowl, California Waterfowl Association, and the California Department of Fish and Game. The Raveling Endowment was created in the memory and spirit of the late Dennis G. Raveling to ensure a permanent funding source for research, teaching, and outreach activities that will enhance, accelerate and ensure the continuing development of waterfowl populations in California, with an emphasis on agricultural lands in CA.

### RESEARCH

The central focus of the research and teaching programs funded through the Dennis G. Raveling Endowment is to evaluate the habitat needs and population dynamics of waterfowl and wetland-dependent wildlife in California and to develop innovative management solutions. This need is even greater today - 20 years after the inception of the Raveling program - with continuing urban growth, a changing agricultural landscape, and ever-increasing demands for water, exacerbated by the current drought.

The primary focus of our research in 2014-15 has been to evaluate the effects of drought on waterfowl and the wetlands upon which they depend. With the support provided by The Raveling Endowment, and in partnership with Delta Waterfowl, we have developed a spatially-explicit agent-based model (termed SWAMP) to examine the impacts of water policy and management scenarios on the energetics and survival of waterfowl in the Central Valley during winter. Another funded project, in collaboration with Oregon State University, uses this new model to evaluate land use and water allocation

**SAVE THE DATE**

**College  
Celebration**

**Friday  
OCTOBER**

**2  
2015**

**5:30-8:30 p.m.**

**Pavilion  
UC Davis**

**More details to  
follow soon. We hope  
you will be able to  
join us.**

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decisions along the Pacific Flyway, linking important wintering habitat in the Central Valley with key migration habitat in the Klamath Basin and southern Oregon – northeast California (SONEC region). In addition, we conducted field studies to measure changes in the body condition of birds during this year of severe drought when foraging habitat is more limited. In another series of studies, we are using our experimental wetlands complex at Roosevelt Ranch (21 replicated 1.5 acre wetlands) to examine how we can make the most efficient use of water in managed wetlands to promote high quality waterfowl habitat, while minimizing water use and costs. Finally, we are in a second year of a National Science Foundation funded study to explore the reproductive biology, population dynamics and ecological genetics of California wood ducks.

### **TEACHING**

Student interest and enrollment in all of my courses has increased exponentially and indeed, has exceeded capacity. Students are now on wait lists to enroll in several of my courses. This past year, I taught 5 courses:

- (1) Biology and Conservation of Wild Birds (WFC 111 - 110 students)
- (2) Laboratory in the Biology of Wild Birds (WFC 111L - 50 students)
- (3) Advanced topics in Waterfowl and Wetland Ecology (WFC 198 - 18 students)
- (4) Field Methods in Wildlife, Fish and Conservation Biology (WFC 100 - 57 students)
- (5) Internship in Wildlife, Fish and Conservation Biology ((WFC 192 - 85 students)

Our enrollments have doubled in the past 5 years and we are delighted by the growing interest in our major and profession.

I also actively mentor a large number of graduate students; the Raveling Endowment has played a pivotal role in training the next generation of waterfowl biologists. Since the inception of the Endowment in 1995, 40 graduate students (16 Ph.D., 24 M.S.) have been supported through the fund, including 32 alumni who are now employed in a variety of natural resources, science, policy, and education positions. Additionally, 6 post-doctoral fellows and over 480 undergraduates have participated in training and research programs funded by the endowment. During the past year, 3 students completed their degrees (1 Ph.D. and 2 M.S.) while another 8 (5 Ph.D. and 3 M.S.) are currently working in the lab. In 2014-15, we also provided internship training opportunities to 85 undergraduate student working on our NSF research project on wood ducks.

### **STUDENTS**

The Raveling Endowment has been especially valuable in providing support for graduate student research. Indeed, the primary use of the Raveling endowment is to support graduate and undergraduate student research and training (please see the list of expenditures below).

### **OUTREACH**

The Raveling Professorship has opened doors to participate in a large number of technical committees dealing with waterfowl and wetland management in California and the nation. Foremost of these in 2014-15 was the North American Waterfowl Management National Science Support Team, charged with providing the technical

support to implement the 2012 revision of the North American Waterfowl Management Plan, the primary planning document for waterfowl and wetland conservation in the US, Canada and Mexico.

We continue to support the Student Hunter Camp developed in partnership with California Waterfowl Association and Paul & Sandi Bonderson for wildlife majors who plan careers as wildlife biologists but have never hunted. The hands-on program introduces students to the commitment, support and respect that hunters have for wildlife and their habitats. Since 2009, over 200 students have applied for the camp and 105 have been selected to participate. In 2014-15, 15 students were selected from over 40 who applied.

The Raveling Endowment has also helped us to “get the word out” in over 135 peer-reviewed publications and technical reports, including 17 published in 2014-15 alone. In addition, the Raveling Endowment has facilitated a large number of presentations to stakeholders, agencies and at local, national and international conferences and meetings, including 20 presentations at national or international scientific conferences in 2014-15.

Finally, we are delighted that our new book on the Ecology and Conservation of North American Sea Ducks, co-edited with J-P. L. Savard, D. Derkson and D. Esler was published this spring! Funds from the Endowment not only support our research, but have also helped support our efforts to extend the results of our work to stakeholders, private landowners and public agencies charged with waterfowl management and conservation in California and the nation.

### HOW HAVE THE FUNDS BEEN USED?

The primary use of the Raveling endowment is to support graduate and undergraduate student research and training. In 2014-15, the income funds from the Endowment were as follows:

#### Income

Endowment Interest Income (2014-15)	\$79,654
Carry-forward from 2013-14 (planned graduate student support)	<u>\$17,284</u>
Total Income	\$96,938

#### Expenditures

Graduate Student Support (fees and stipends)	\$66,493
Research Assistants	\$ 4,367
Research Support (truck rental, gas, field expenses)	\$14,098
Research Supplies (field and lab supplies and equipment for projects)	\$ 8,715
Travel (support for students to attend conferences, meetings)	<u>\$ 3,127</u>
Total Expenditures	\$96,800

### NEW AND UNIQUE ENDOWMENT USE

The Raveling Endowment has, simply put, opened doors, established visibility and credibility of our program, and provided seed funding for projects and graduate student training that have, in turn, leveraged additional funds many-fold. The actual value of the interest income is very helpful, but it's true power lies as a symbolic

commitment by stakeholders dedicated to ensuring the long-term viability of our waterfowl and the wetlands upon which they depend. In recognition of some of our accomplishments, I am proud to acknowledge the following awards and honors to recognize our effects:

- Recipient of Distinguished Scholarly Public Service Award, Academic Senate, University of California, Davis
- Recipient of National Blue-winged Teal Award, North American Waterfowl Management Plan Committee, US Fish & Wildlife Service
- Recipient of Wetland Conservation Achievement Award in Science/Research, Ducks Unlimited Inc.

## LEVERAGING ADDITIONAL FUNDING

We have been highly successful in obtaining additional research grant support. During the past year, total research funds from external sources exceeded \$975,000. An additional \$215,000 was raised to support graduate students through scholarships, fellowships and assistantships. Hence, the \$79,654 fund payout received through the Raveling Endowment has leveraged more than \$1.19 Million in additional funding, more than a 10-fold return.

## THANKS

The Dennis G. Raveling Endowed Waterfowl Professorship was made possible through the vision and generosity of many donors, both private and public. It has been an effort motivated by a passion for waterfowl and the wetlands upon which they depend, and by a desire to find sensible and practical solutions to sustain these populations in California's agricultural landscape. UC Davis is an active custodian of the Endowment, ensuring that it is managed to the highest current standards (UPMIFA) and that funds are being used only for their intended purpose.

